APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/477,166	01/04/2000	ALI NAJIB SALEH	M-7166-IP-US	8782

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EXAMINER
LEE, TIMOTHY L

ART UNIT	PAPER NUMBER
2697	9

DATE MAILED: 09/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>*24 June 2003*</u> .

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-36* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

    If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____ .

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

    a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)   4)☐ Interview Summary (PTO-413) Paper No(s). _____ .

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)   5)☐ Notice of Informal Patent Application (PTO-152)

3)☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .   6)☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2.   Claims 1-5, 13, 15, 16, 17, 20, 24, 25, 27, 28, 29 and 36 are rejected under 35

U.S.C. 102(e) as being anticipated by Smith (US 6,188,686). Smith discloses a system for

switching in an ATM network that includes a plurality of inputs and a plurality of outputs

(configuring said switch matrix to couple a plurality of inputs to a plurality of outputs). See

Abstract. In one embodiment, the connections means may comprise time-division multiplexing

means for each data delivery group, operable repetitively to perform a preselected sequence of

switching cycles that includes at least one first switching cycle. The switching cycles are

preferably of the same duration (a time period of said minimal concurrency defining a switching

period). This arrangement is easy to control since the same sequence of switching cycles is

repeated. The sequence will normally include one type of switching cycle for each data unit of

the group, e.g. first, second, third, and fourth switching cycles for a four-data-unit group (each

one of said plurality of information streams comprises a plurality of portions in a sequence and is

received at a corresponding one of said plurality of inputs). In time-division multiplexing, each

of the portions of data from the group will have its own time slot for being transmitted—the

reason for having time slots is so that collisions of data can be avoided (a one of said plurality of

portions is in a specific position of said sequence; a time period during which said one of said

plurality of portions transits said switching matrix is at least minimally concurrent with said time

period for each other one of said plurality of information streams). It is inherent that the

switching apparatus must reconfigure itself during the different time periods so that information

from the different inputs can reach the different outputs (reconfiguring said switch matrix during

said switching period). See col. 3, line 50-col. 4, line 26; col. 25, lines 1-64; col. 26, lines 21-59,

and col. 28, lines 24-49.

3.   Regarding claim 20 more specifically, Smith discloses that the time-division multiplexing

means can be implemented through a overall switching controller, used to control all components

of the apparatus (control circuitry, having a control output coupled to said control

input...configure said switching matrix to output said information stream at a one of said

plurality of matrix outputs).

4.   Regarding claim 36 more specifically, data and metadata can be considered one in the

same—it will still be "data" and be formatted similarly.

5.   Regarding claims 2, 15, and 24, Smith discloses a system that includes many outputs and

many inputs. See Fig. 13. The purpose of the switching system is to allow an input to be

directed toward any of the outputs (reconfiguring couples said first input to a second output).

6.   Regarding claims 3 and 16, Smith discloses that an input connection can be switched into

a data-passing state, in which it serves to pass data from its data unit to said associated input port

(non-blocking switch matrix). See col. 2, lines 47-57.

7.   Regarding claim 4, Smith discloses that the switching means are preferably cross-connect

switching means which have the advantage of being memory-less, but could alternatively be

memory based switching types such as CLOS types (switching matrix is a CLOS switching

matrix). See col. 11, lines 1-4.

8.   Regarding claim 5, it is inherent that a time-division system is used so that collisions will

be avoided between two inputs that would like to transmit to the same output at the same time.

The system was designed to avoid generating collision errors.

9.   Regarding claim 17, Smith discloses that the switching cycles can be scheduled to allow

one stream to have a higher output to allow for changing traffic conditions. See col. 28, lines 24-

39.

10.   Regarding claim 25, if one of the samples contains no data, then inherently it becomes

expendable because no data would be lost if it wasn't sent.

11.   Regarding claim 27, as mentioned previously, the system includes a plurality of inputs

and a plurality of outputs, all with different streams of data. The purpose of the switching matrix

and the time-division multiplexing is to allow for switching of all of these different lines and to

allow for the data to be transmitted with no collisions or errors.

12.   Regarding claims 28 and 29, it is well-known in the art that the information supplied to

the control processor could be hardwired into the hardware or could be run off software. As

mentioned previously, Smith discloses that the scheduler can adapt the time-division

multiplexing depending the current traffic conditions.

Claim Rejections - 35 USC § 103

13.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

14.   Claims 6, 10-12, 18-19, 21-23, 30-33, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith in view of Toy (US 5,410,600) and in light of the rejections of the independent claims from above.

15.   Regarding claims 6, 17, 21, 23, and 30, Smith does not expressly disclose an input resequencing circuit the circuit moves one of said plurality of sub-portions from an original position in a sequence of said each one of said plurality of portions to another position in said sequence. Toy discloses the re-arranging and the resequencing of packets before and after they have been switched. Before being switched, the bits are scrambled (move a one of said plurality of sub-portions of each one of said plurality of portions from an original position in sequence to another position in said sequence), and on reception, the bits are descrambled (a first and second output resequencing circuit coupled to said plurality of matrix outputs and configurd to move sub-portions from another position to the original position). See at least col. 2, lines 41-61. It would have been obvious to a person or ordinary skill in the art at the time of the invention to add the rearranging and resequencing capabilities taught by Toy to the switching network of Smith. One of ordinary skill in the art would have been motivated to do this because re-arranging the data can allow for more secure data transmission as it acts as some basic from of encryption. See also col. 10, lines 47-62 of Toy for additional motivation as to why resequencing can be advantageous.

16.   Regarding claims 10 and 18, Toy does not expressly disclose re-arranging the portions such that a number of portions are set in contiguous positions, but it is obvious that during the

scrambling of bits that they could be scrambled in such a manner that the bits are in contiguous

positions. One of ordinary skill in the art would have been motivated to do this because the data

could be more efficiently compressed by sending it all in a compacted period of time.

17.   Regarding claims 11, 19, 22, and 31 (referring to second output requencing circuit), Toy

discloses in re-arranging that the bits can be put back into their original positions. It would have

been obvious to allow for the re-arrangement of bits back to their original positions after

resequencing in the system disclosed by Smith. One would have been motivated to do this

because eventually the bits will have to be put back in their original order for the data to be read

properly.

18.   Regarding claim 12, Smith does not expressly disclose the reading, processing, and

writing of protocol information during the transmission of data, but it is obvious that these steps

need to be done if a packet is to travel from one protocol to another.

19.   Regarding claim 32, Smith discloses that an input connection can be switched into a data-

passing state, in which it serves to pass data from its data unit to said associated input port (non-

blocking switch matrix). See col. 2, lines 47-57.

20.   Regarding claim 33, if one of the samples contains no data, then inherently it becomes

expendable because no data would be lost if it wasn't sent.

21.   Regarding claim 35, as mentioned previously, the system includes a plurality of inputs

and a plurality of outputs, all with different streams of data. The purpose of the switching matrix

and the time-division multiplexing is to allow for switching of all of these different lines and to

allow for the data to be transmitted with no collisions or errors.

22.   Claims 7, 8, 9, 14, 26, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Smith in view of Toy in furthur view of Kartolopoulos (US 6,266,333) and in light of the

rejections above. Smith nor Toy does not expressly discloses the use of a SONET frame nor a

portion of data containing network overhead. Kartalopoulos discloses the use of SONET frames,

which happen to contain network overhead in them. See col. 1, lines 41-52. It would have been

obvious to a person of ordinary skill in the art at the time of the invention to use SONET frames

as the information stream. One of ordinary skill in the art would have been motivated to do this

because SONET frames are a common standard used in transmitting information over optical

lines.

23.   Regarding claim 9, SONET requires a continuous flow of bits to remain synchronized, so

it is obvious that the portions will be loaded with a value to keep the system synchronized. See

col. 2, lines 49-63.

24.   Regarding claim 14, Kartalopoulos does not expressly disclose the timing of when the

leading edge of a portion should be output before a trailing edge of one portion should be

received by an input, but it is obvious that the time period of minimal concurrency is such that a

leading edge of one portion has been output before a trailing edge is received. One of ordinary

skill in the art would have been motivated to do this because this is just one way of setting the

timing parameters of the system.

Response to Arguments

25.   Applicant's arguments with respect to claims 1-35 have been considered but are moot in

view of the new ground(s) of rejection.
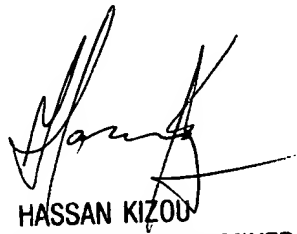
Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Timothy Lee whose telephone number is (703)305-7349. The

examiner can normally be reached on M-F, 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Hassan Kizou can be reached on (703)305-4744. The fax phone number for the

organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the receptionist whose telephone number is (703)305-4700.

TLL

HASSAN KIZOU
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